

# Taller de espacios de Banach

Pedro Tradacete  
ICMAT

## Strictly singular multiplication operators on $L(X)$

For a Banach space  $X$ , let  $L(X)$  denote the space of bounded linear operators from  $X$  to itself. For any pair of operators  $A, B$  in  $L(X)$  one can define the multiplication operator  $L_A R_B$  acting on  $L(X)$  as  $L_A R_B(T) = ATB$ . The general aim is to study properties of  $L_A R_B$  in terms of those of  $A$  and  $B$ . In particular, Lindström, Saksman and Tylli have shown that when  $X = L_p$  the multiplication  $L_A R_B$  is strictly singular precisely when  $A$  and  $B$  are. The proof is however somehow long and tiresome. In this talk, we will see a factorization argument which could provide an alternative approach: if  $A$  and  $B$  are strictly singular on  $L_p$  then  $L_A R_B$  actually factors through the space compact operators on  $l_p$ . This is based on joint work with M. Mathieu (Belfast).

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